

In re Application of: Kowalchik et al.
Attorney Docket No.: EMR-00401

AMENDMENTS TO THE SPECIFICATION

Please amend the title of the application as follows:

Disk Cache Interfacing System and Method.

Please replace the paragraph appearing on page 1 in the section entitled "Reference to Related Applications" with the following:

A1 This application relates to U.S. Patent Application Serial No. 10/004,090, entitled "Data Storage Device", filed on the same day as this application, and incorporated by reference herein.

Please replace the paragraph beginning on page 2, line 13 with the words "Embodiments may include...", and ending on page 2, line 24 with the words "...the disks." with the following:

A2 Embodiments may include one or more of the following features. The front-end interface may conform to a protocol such as SCSI (Small Computer System Interface), Fibre Channel, ~~Infiniband~~ INFINIBAND, and/or IDE (Integrated Device Electronics). The disks may have platters less than 3.5 inches in diameter such as 2.5 inch, 1.8 inch, and/or 1 inch diameter platters. The cache may implement a RAID (Redundant Array of Independent Disks) scheme using the disks. The cache may request data from a back-end storage system, retrieve requested data from the disks, send data to the back-end system for writing, determine the location of back-end system data within the disks, and/or remove data from the disks.

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Please replace the paragraph beginning on page 2, line 30 with the words "In general,...", and ending on page 3, line 5 with the words "...in the disks." with the following:

A3
In general, in another aspect, the disclosure describes a method of servicing data access requests at a cache having cache storage formed by at least two disks. The method includes receiving the data access requests that ~~requests~~ specify different respective data storage addresses and servicing at least some of the requests using data stored in the disks.

Please replace the paragraph beginning on page 4, line 10 with the words "FIG. 1 illustrates...", and ending on page 4, line 24 with the words "...handling multiple requests." with the following:

A4
FIG. 1 illustrates a cache 100 that uses a collection of disks 110 for cache storage instead of volatile memory. Since the slow speed of disks usually contributes to the need for a cache 100, a cache 100 featuring disks 110 may seem counter-intuitive. However, spreading cached data across a large number of disks 110 in the cache 100 can increase the number of disks 110 involved in responding to a set of requests. While the delay associated with the mechanics of accessing data from an individual disk 110 may remain unchanged, spreading cached data across the disks 110 increases the number of disks simultaneously seeking information and can increase overall transaction rates. In other words, while increasing the number of spindles and independently actuated read/write heads may not necessarily increase the servicing of a single request, amassing the spindles may increase the performance of a cache handling multiple requests.

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Please replace the paragraph beginning on page 5, line 10 with the words "As shown,...", and ending on page 5, line 22 with the word "memory." with the following:

A5
As shown, the cache 100 includes a front-end interface 104 that communicates with hosts (e.g., a remote computer), or other components. For example, the front-end interface 104 may receive an Input/Output (I/O) request for a block of back-end storage 102 specified by a data storage address. While not a requirement, the interface 104 may conform to a wide variety of different interconnectivity and communications protocols such as SCSI (Small Computer System Interface), Fibre Channel, or ~~Infiniband~~ INFINIBAND. Thus, the interface 104 can present a standard front-end offered by a variety of other devices. The interface 104 can hide details of cache 100 construction. That is, a host or other system component need not have any knowledge that the cache 100 uses disks 110 for cache storage instead of memory.

Please replace the paragraph beginning on page 8, line 15 with the words "The cache 100...", and ending on page 8, line 21 with the words "... in greater detail." with the following:

AL
The cache 100 may provide or be configured with disk interfaces (e.g., SCSI or IDE [Integrated Disk Electronics]) that allow a system manager to attach disks to the cache 100 as desired. For example, a system manager may add disks to increase the size of a cache. Co-pending U.S. Patent ~~Application~~ Application Serial No. 10/004,090, entitled "Data Storage Device", describes a sample implementation of a multi-disk device in greater detail.